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SECTION 1.—AEROLOGY.

SOLAR AND SKY RADIATION MEASURED AT WASHINGTON, D. C., DURING JUNE, 1915.

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[Dated: Washington, D. C., July 31, 1915.]

In Table 1 are summarized the measurements of the intensity of direct solar radiation made by the Weather Bureau at the American University,[1] Washington, D. C., during June, 1915. The p. m. means for the month are slightly higher than the 5-year means published in the Bulletin of the Mount Weather Observatory, 1912, **5** : 182, Table 3. A noon intensity of 1.43 calories measured on June 10, 1915, exceeds any measurement heretofore obtained at Washington in June.

Skylight polarization, measured at solar distance 90° and in his vertical, with the sun at zenith distance 60°, averaged 52 per cent, with a maximum of 63 per cent. This latter is 7 per cent higher than the average maximum for June published in the Bulletin of the Mount Weather Observatory, **3** : 114, Table 16.

TABLE 1.—*Solar radiation intensities at Washington, D. C., during June, 1915.*

[Gram-calories per minute per square centimeter of normal surface.]

Date.	Sun's zenith distance.										
	0.0°	48.3°	60.0°	66.5°	70.7°	73.6°	75.7°	77.4°	78.3°	79.8°	80.7°
	Air mass.										
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
1915. A. M.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.	Gr.-cal.
June 5	.....	1.07	0.91	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	1.06	0.98	0.91	0.84	.....	.....	.....	.....	.....
8	.....	.....	0.76	0.65	.....	.....	.....	.....	.....	.....	.....
9	1.21	0.98	0.83	0.80	0.78	.....	.....	.....	.....	.....	.....
10	1.44	1.36	1.25	1.15	1.07	0.99	0.91	.....	.....	.....	.....
18	.....	1.04	0.87	0.82	0.76	0.66	0.60	0.55	0.51	.....	.....
23	.....	1.26	1.09	1.02	0.95	0.87	0.78	0.71	0.64	.....	.....
25	1.08	.....	0.85	.....	.....	.....	.....	.....	.....	.....	.....
27	.....	1.08	0.88	0.74	.....	.....	.....	.....	.....	.....	.....
28	1.41	1.30	1.21	1.12	1.05	0.97	0.89	0.81	.....	.....	.....
30	1.25	1.06	0.87	0.77	.....	.....	.....	.....	.....	.....	.....
Means	**1.28**	**1.14**	**0.96**	**0.89**	**0.92**	**0.87**	**0.80**	**0.69**	**(0.58)**	.....	.....
P. M.											
June 8	1.40	1.26	1.17	1.07	0.99	0.92	0.85	.....	.....	.....	.....
9	.....	1.11	.....	0.79	0.73	0.61	.....	.....	.....	.....	.....
10	.....	1.34	1.21	.....	.....	.....	.....	.....	.....	.....	.....
15	1.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	1.29	1.18	1.08	0.97	0.88	0.80	0.74	0.68	.....	.....	.....
24	.....	1.24	1.09	0.97	0.89	.....	.....	.....	.....	.....	.....
25	.....	.....	0.94	0.83	.....	.....	.....	.....	.....	.....	.....
Means	**1.31**	**1.23**	**1.10**	**0.92**	**0.87**	**0.78**	**(0.80)**	**(0.68)**	.....	.....	.....

[1] For a description of exposures of instruments, and details of methods of observation, *see* this REVIEW, December, 1914, **42**: 648.

In Table 2, column 2 gives the daily totals of solar and sky radiation received on a horizontal surface at the American University. The measurements were made with a Callendar recording pyrheliometer as described in the REVIEW for March, 1915, **43** : 100. Table 2, column 3, gives the departures from the normals published in the same number of the REVIEW, page 108, Table 4.

The "Percentage of possible sunshine," and the "Average cloudiness," given in columns 5 and 6 of Table 2, have been taken from the records of the observatory at the central office of the Weather Bureau.

TABLE 2.—*Daily totals and departures of solar and sky radiation at Washington, D. C., during June, 1915.*

[Gram-calories per square centimeter of horizontal surface.]

Day of month.	Daily total.	Departure from normal.	Excess or deficiency since first of month.	Percentage of possible sunshine.	Average cloudiness.
	Gr.-cal.	*Gr.-cal.*	*Gr.-cal.*	*Per cent.*	*0–10.*
June 1	302	−228	− 228	26	9
2	71	−458	− 686	0	10
3	209	−320	−1,006	1	10
4	466	− 63	−1,069	54	6
5	578	50	−1,019	76	3
6	315	−213	−1,232	39	8
7	545	18	−1,214	75	4
8	635	108	−1,106	95	3
9	680	154	− 952	100	0
10	750	225	− 727	96	1
11	605	80	− 647	77	5
12	646	122	− 525	78	4
13	502	− 22	− 547	58	7
14	570	47	− 500	60	7
15	505	− 18	− 518	58	7
16	507	− 15	− 533	69	7
17	565	43	− 490	64	6
18	548	26	− 464	62	4
19	514	− 8	− 472	53	6
20	577	55	− 417	95	3
Decade departure	.....	.....	310	.....	.....
21	514	− 9	− 426	41	9
22	622	99	− 327	66	5
23	753	230	− 97	99	0
24	739	216	119	92	3
25	615	92	211	97	2
26	390	−134	77	50	8
27	716	192	269	97	1
28	770	246	515	100	1
29	648	124	639	82	3
30	499	− 25	614	50	9
Decade departure	.....	.....	1,031	.....	.....
Total excess or deficiency since first of year	.....	.....	−1,058	.....	.....

The above data show more than the average cloudiness and less than the average sunshine during the first decade in June, but less than the average cloudiness and more than the average sunshine during the second and third decades, the excess of sunshine being especially marked during the third decade.